W03143

Quanterra

Quanterra
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Richland, Washington 99352-1613

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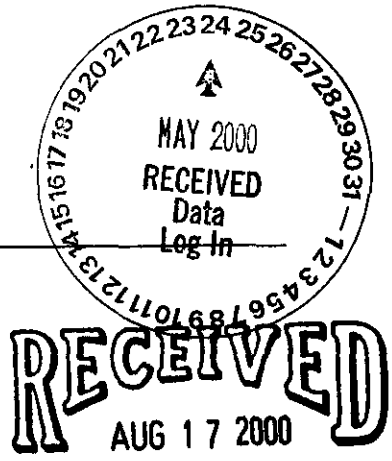
0053545

CERTIFICATE OF ANALYSIS

Bechtel Hanford, Inc.
3350 George Washington Way
Richland, WA 99352

May 22, 2000

Attention: Joan Kessner



SAF Number	:	B99-029
Date SDG Closed	:	April 24, 2000
Number of Samples	:	One (1)
Sample Type	:	Other
SDG Number	:	W03143
Data Deliverable	:	45-Day / Summary

I. Introduction

On April 10, 2000, one other (matrix: solid) sample was received at STL Richland (STLR) for radiochemical analysis. Upon receipt, the sample was assigned the following laboratory ID number to correspond with the Bechtel Hanford, Inc. (BHI) specific ID:

STLR ID#	BHI ID#	MATRIX	DATE OF RECEIPT
9DAP4K10	B0Y0H7	OTHER	4/10/00

II. Analytical Results/Methodology

The analytical results for this report are presented by laboratory sample ID. Each set of data includes sample identification information, analytical results and the appropriate associated statistical errors.

The requested analyses were:

Gas Proportional Counting
Total Strontium by method RICH-RC-5006
Alpha Spectroscopy
Uranium-234, -235, -238 by method RICH-RC-5079
Liquid Scintillation Counting
Tritium by method RICH-RC-5037
Technetium-99 by method RICH-RC-5078

III. Quality Control

The analytical results for each analysis performed under SDG W03143 include a minimum of one Laboratory Control Sample (LCS), one method (reagent) blank, and one duplicate sample analysis. Any exceptions have been noted in the "Comments" section.

QC and sample results are reported in the same units.

IV. Comments

Gas Proportional Counting
Total Strontium by method RICH-RC-5006:
The LCS, batch blank, samples and sample duplicate (B0Y0H7) results are within contractual requirements.

Alpha Spectroscopy
Uranium-234, -235, -238 by method RICH-RC-5079:
The LCS, batch blank, samples and sample duplicate (B0Y0H7) results are within contractual requirements.

Liquid Scintillation Counting
Tritium by method RICH-RC-5037:
The LCS, batch blank, samples and sample duplicate (B0Y0H7) results are within contractual requirements.

Technetium-99 by method RICH-RC-5078:
The LCS, batch blank, samples, sample duplicate (B0Y0H7) and sample matrix spike (B0Y0H7) results are within contractual requirements.

I certify that this Certificate of Analysis is in compliance with the SOW, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hard copy data package has been authorized by the Laboratory Manager, or a designee as verified by the following signature.

Reviewed and approved:

Jackie Waddell
Project Manager

Quanterra

SAMPLE RESULTS

LAB NAME:	**STL Richland**	**SDG: /RPT GRP:**	W03143 / 10516
LOT,RPT DB ID:	J0D100164-1 9DAP4K10	**MATRIX:**	OTHER
CLIENT ID:	B0Y0H7	**DATE RECEIVED:**	4/10/2000 1:55:00 PM

ANALYTE	RESULT	Q	COUNTING ERROR (2 s)	TOTAL ERROR (2 s)	MDA/IDL	RPT UNIT	YIELD	METHOD NUMBER	WORK ORDE	BAT-CH
U-234	2.42E+00		3.0E-01	5.6E-01	4.28E-02	pCi/g	46.77%	RICHRC5079	DAP4K	0119276
U-235	1.21E-01	J	6.7E-02	7.1E-02	3.77E-02	pCi/g	46.77%	RICHRC5079	DAP4K	0119276
U-238	2.08E+00		2.8E-01	4.9E-01	4.28E-02	pCi/g	46.77%	RICHRC5079	DAP4K	0119276
STRONTIUM	5.16E-02	U	4.9E-02	5.1E-02	9.75E-02	pCi/g	56.80%	RICHRC5006	DAP4K	0119278
H-3	5.45E+00	J	2.1E-01	4.2E-01	1.55E-01	pCi/g	100.00%	RICHRC5037	DAP4K	0119279
TC-99	2.19E-01	U	1.1E-02	7.0E-01	7.70E-01	pCi/g	100.00%	RICHRC5078	DAP4K	0119277

Number of Results: 6

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DUPLICATE RESULTS

LAB NAME:	**STL Richland**		**SDG: /RPT GRP:**	W03143 / 10516
LOT,RPT DB ID:	J0D100164-1	DAP4K16R	**MATRIX:**	OTHER
CLIENT ID:	B0Y0H7 DUP		**DATE RECEIVED:**	4/10/2000 1:55:00 P
ORIG LAB ID:	9DAP4K10			

ANALYTE	DUP RESULT	Q	COUNTING ERROR (2 s)	TOTAL ERROR (2 s)	MDA/ IDL	REPORT UNIT	YIELD	METHOD NUMBER	ORIG RESULT	RPD
U-234	2.66E+00		2.6E-01	5.4E-01	4.46E-02	pCi/g	75.07%	RICHRC5079	2.42E+00	9.58%
U-235	7.79E-02	J	4.4E-02	4.6E-02	3.28E-02	pCi/g	75.07%	RICHRC5079	1.21E-01	43.29%
U-238	1.99E+00		2.2E-01	4.2E-01	5.09E-02	pCi/g	75.07%	RICHRC5079	2.08E+00	4.81%

Number of Results: 3

Quanterra

DUPLICATE RESULTS

LAB NAME:	**STL Richland**		**SDG: /RPT GRP:**	W03143 / 10516
LOT,RPT DB ID:	J0D100164-1	DAP4K18R	**MATRIX:**	OTHER
CLIENT ID:	B0Y0H7 DUP		**DATE RECEIVED:**	4/10/2000 1:55:00 P
ORIG LAB ID:	9DAP4K10			

ANALYTE	DUP RESULT	Q	COUNTING ERROR (2 s)	TOTAL ERROR (2 s)	MDA/ IDL	REPORT UNIT	YIELD	METHOD NUMBER	ORIG RESULT	RPD
TC-99	7.11E-01	U	3.5E-02	7.3E-01	7.73E-01	pCi/g	100.00%	RICHRC5078	2.19E-01	105.67%

Number of Results: 1

Quanterra

DUPLICATE RESULTS

LAB NAME:	**STL Richland**		**SDG: /RPT GRP:**	W03143 / 10516
LOT,RPT DB ID:	J0D100164-1	DAP4K19R	**MATRIX:**	OTHER
CLIENT ID:	B0Y0H7 DUP		**DATE RECEIVED:**	4/10/2000 1:55:00 P
ORIG LAB ID:	9DAP4K10			

ANALYTE	DUP RESULT	Q	COUNTING ERROR (2 s)	TOTAL ERROR (2 s)	MDA/ IDL	REPORT UNIT	YIELD	METHOD NUMBER	ORIG RESULT	RPD
STRONTIUM	-2.74E-02	U	8.0E-02	8.0E-02	1.86E-01	pCi/g	25.80%	RICHRC5006	5.16E-02	651.81%

Number of Results: 1

Result = IDL When Not Detecte

(Q)ualifiers: U = Analyte result < MDA/IDL,
J = No U qualifier and result < RDL.

Severn Trent Laboratories Richland
rptChemRadDup; v3.41

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DUPLICATE RESULTS

LAB NAME:	**STL Richland**	**SDG: /RPT GRP:**	W03143 / 10516
LOT,RPT DB ID:	J0D100164-1 DAP4K1AR	**MATRIX:**	OTHER
CLIENT ID:	B0Y0H7 DUP	**DATE RECEIVED:**	4/10/2000 1:55:00 P
ORIG LAB ID:	9DAP4K10		

ANALYTE	DUP RESULT	Q	COUNTING ERROR (2 s)	TOTAL ERROR (2 s)	MDA/ IDL	REPORT UNIT	YIELD	METHOD NUMBER	ORIG RESULT	RPD
H-3	4.86E+00	J	1.9E-01	3.8E-01	1.41E-01	pCi/g	100.00%	RICHRC5037	5.45E+00	11.45%

Number of Results: 1

Result = IDL When Not Detecte

(Q)ualifiers: U = Analyte result < MDA/IDL,
J = No U qualifier and result < RDL.

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BLANK RESULTS

LAB NAME: STL Richland **SDG /RPT GRP:** W03143 / 10516

LOT,RPT DB ID: J0D280000-276 DCHNT11B **MATRIX:** OTHER

ANALYTE	RESULT	Q	COUNTING ERROR (2s)	TOTAL ERROR (2s)	MDA/IDL	RPT UNIT	YIELD	METHOD NUMBER	WORK ORDE	BAT-CH
U-234	6.32E-03	U	1.3E-02	1.3E-02	2.72E-02	pCi/g	92.97%	RICHRC5079	DCHNT	0119276
U-235	-1.05E-03	U	1.2E-03	1.2E-03	2.19E-02	pCi/g	92.97%	RICHRC5079	DCHNT	0119276
U-238	-3.52E-04	U	7.0E-04	7.1E-04	1.77E-02	pCi/g	92.97%	RICHRC5079	DCHNT	0119276

Number of Results: 3

Quanterra

BLANK RESULTS

LAB NAME: STL Richland **SDG /RPT GRP:** W03143 / 10516

LOT,RPT DB ID: J0D280000-277 DCHNW11B **MATRIX:** OTHER

ANALYTE	RESULT	Q	COUNTING ERROR (2s)	TOTAL ERROR (2s)	MDA/IDL	RPT UNIT	YIELD	METHOD NUMBER	WORK ORDE	BAT-CH
TC-99	1.12E-01	U	5.8E-03	6.9E-01	7.74E-01	pCi/g	100.00%	RICHRC5078	DCHN	0119277

Number of Results: 1

Result = IDL When Not Detected

(Q)ualifiers: U = Analyte result < MDA/IDL,
J = No U qualifier and result < RDL

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rptChemRadBlank; v3.41

Quanterra

BLANK RESULTS

LAB NAME: STL Richland **SDG /RPT GRP:** W03143 / 10516

LOT,RPT DB ID: J0D280000-278 DCHP111B **MATRIX:** OTHER

ANALYTE	RESULT	Q	COUNTING ERROR (2s)	TOTAL ERROR (2s)	MDA/IDL	RPT UNIT	YIELD	METHOD NUMBER	WORK ORDE	BAT-CH
STRONTIUM	9.74E-03	U	2.6E-02	2.6E-02	5.58E-02	pCi/g	94.20%	RICHRC5006	DCHP1	0119278

Number of Results: 1

Result = IDL When Not Detected

(Q)ualifiers: U = Analyte result < MDA/IDL,
J = No U qualifier and result < RDL

Severn Trent Laboratories Richland

rptChemRadBlank; v3.41

Quanterra

BLANK RESULTS

LAB NAME: STL Richland **SDG /RPT GRP:** W03143 / 10516

LOT,RPT DB ID: J0D280000-279 DCHP313X **MATRIX:** OTHER

ANALYTE	RESULT	Q	COUNTING ERROR (2s)	TOTAL ERROR (2s)	MDA/IDL	RPT UNIT	YIELD	METHOD NUMBER	WORK ORDE	BAT-CH
H-3	1.13E-01	U	1.5E-02	2.2E-01	3.29E-01	pCi/g	100.00%	RICHRC5037	DCHP3	0119279

Number of Results: 1

Result = IDL When Not Detected

(Q)ualifiers: U = Analyte result < MDA/IDL,
J = No U qualifier and result < RDL

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LABORATORY CONTROL SAMPLE

LAB NAME: STL Richland **SDG: /RPT GRP:** W03143 / 10516

LAB SAMPLE ID: DCHNT12S **MATRIX:** OTHER

ANALYTE	RESULT	Q	COUNTING ERROR (2 s)	TOTAL ERROR (2 s)	MDA/ IDL	REPORT UNIT	YIELD	EXPECTED	RECOVERY
U-234	8.34E-01	J	1.2E-01	1.8E-01	1.93E-02	pCi/g	101.83%	8.68E-01	96.08%
U-235	2.04E-02	J	1.9E-02	1.9E-02	1.93E-02	pCi/g	101.83%	3.96E-02	51.52%
U-238	7.40E-01	J	1.1E-01	1.7E-01	2.25E-02	pCi/g	101.83%	9.09E-01	81.46%

Number of Results: 3

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LABORATORY CONTROL SAMPLE

LAB NAME:	**STL Richland**	**SDG: /RPT GRP:**	W03143 / 10516
LAB SAMPLE ID:	DCHNW12S	**MATRIX:**	OTHER

ANALYTE	RESULT	Q	COUNTING ERROR (2 s)	TOTAL ERROR (2 s)	MDA/ IDL	REPORT UNIT	YIELD	EXPECTED	RECOVERY
TC-99	2.88E+01		6.3E-01	2.7E+00	7.69E-01	pCi/g	100.00%	3.38E+01	85.18%

Number of Results: 1

Result = IDL When Not Detecte

(Q)ualifiers: **U = *Analyte result* < *MDA/IDL*,**
J = No U qualifier and result < RDL.

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***rptChemRadLcs*; v3.41**

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LABORATORY CONTROL SAMPLE

LAB NAME:	**STL Richland**	**SDG: /RPT GRP:**	W03143 / 10516
LAB SAMPLE ID:	DCHP112S	**MATRIX:**	OTHER

ANALYTE	RESULT	Q	COUNTING ERROR (2 s)	TOTAL ERROR (2 s)	MDA/ IDL	REPORT UNIT	YIELD	EXPECTED	RECOVERY
STRONTIUM	1.05E+00		8.4E-02	2.9E-01	5.63E-02	pCi/g	95.10%	1.14E+00	92.16%

Number of Results: 1

Quanterra

LABORATORY CONTROL SAMPLE

LAB NAME:	**STL Richland**	**SDG: /RPT GRP:**	W03143 / 10516
LAB SAMPLE ID:	DCHP312S	**MATRIX:**	OTHER

ANALYTE	RESULT	Q	COUNTING ERROR (2 s)	TOTAL ERROR (2 s)	MDA/ IDL	REPORT UNIT	YIELD	EXPECTED	RECOVERY
H-3	1.62E+00	J	1.4E-01	3.4E-01	3.38E-01	pCi/g	100.00%	1.41E+00	114.89%

Number of Results: 1

Result = IDL When Not Detecte

(Q)ualifiers: U = Analyte result < MDA/IDL,
J = No U qualifier and result < RDL.

Severn Trent Laboratories Richland

rptChemRadLcs; v3.41

Quanterra

MATRIX SPIKE RESULTS

LAB NAME:	**STL Richland**	**SDG: /RPT GRP:**	W03143 / 10516
LAB SAMPLE ID:	DAP4K17W	**MATRIX:**	OTHER

ANALYTE	SPIKE RESULT*	Q	COUNTING ERROR (2 s)	TOTAL ERROR (2 s)	MDA/IDL	REPORT UNIT	SAMPLE RESULT	EXPECTED	RECOVERY
TC-99	1.64E+02		1.6E+00	1.2E+01	7.77E-01	pCi/g	2.19E-01	2.26E+02	72.35%

Number of Results: 1

*Spike Result Corrected For Sample Result

Result = IDL When Not Detecte

(Q)ualifiers: U = Analyte result < MDA/IDL,
J = No U qualifier and result < RDL.

STL RICHLAND
Data Review Checklist
RADIOCHEMISTRY

Lot Number: JOD100164				
Client ID: BHI				
Due Date: 5-1-00				
QC Batch Number: 0119276		SDG Number: W03143		
Method Test Parameter: U ISO				
Matrix: Other				
Review Item	Yes (√)	No (√)	N/A (√)	2nd Level Review (√)
A. Calibration 1. Is the calibration documentation included where applicable?			✓	
B. Sample Analysis 1. Are the sample yields within acceptance criteria?	✓			
2. Were all sample holding times met?	✓			
3. Is the sample Minimum Detectable Activity < the Contract Detection Limit?	✓			
C. QC Samples 1. Is the blank yield within acceptance criteria?	✓			
2. Is the Minimum Detectable Activity for the blank result ≤ the Contract Detection Limit?	✓			
3. Does the blank result meet the Contract criteria?	✓			
4. Is the blank result < the Contract Detection Limit?	✓			
5. Is the blank result > the Contract Detection Limit but the sample result < the Contract Detection Limit?			✓	
6. Is the LCS result within acceptance criteria?	✓			
7. Is the LCS yield within acceptance criteria?	✓			
8. Is the LCS Minimum Detectable Activity ≤ the Contract Detection Limit?	✓			
9. Do the MS/MSD results and yields meet acceptance criteria?			✓	
10. Do the duplicate sample results and yields meet acceptance criteria?	✓			
D. Other 1. Are all Nonconformances included and noted?			✓	
2. Are all required forms filled out?	✓			
3. Was the correct methodology used?	✓			
4. Was transcription checked?	✓			
5. Were all calculations checked at a minimum frequency?	✓			
6. Were units checked?	✓			

Comments on any "No" response: _____

First Level Review: Richard Waddell Date: 5/10/00

Second Level Review: _____ Date: 5/4/00

LS-038, Rev.6, 5/00

STL RICHLAND
Data Review Checklist
RADIOCHEMISTRY

Lot Number: JOD100164				
Client ID: BHI				
Due Date: 5-1-00				
QC Batch Number: 0119278 SDG Number: WQ3143				
Method Test Parameter: Total Sr				
Matrix: Other				
Review Item	Yes (√)	No (√)	N/A (√)	2nd Level Review (√)
A. Calibration 1. Is the calibration documentation included where applicable?			✓	
B. Sample Analysis 1. Are the sample yields within acceptance criteria?	✓			
2. Were all sample holding times met?	✓			
3. Is the sample Minimum Detectable Activity < the Contract Detection Limit?	✓			
C. QC Samples 1. Is the blank yield within acceptance criteria?	✓			
2. Is the Minimum Detectable Activity for the blank result ≤ the Contract Detection Limit?	✓			
3. Does the blank result meet the Contract criteria?	✓			
4. Is the blank result < the Contract Detection Limit?	✓			
5. Is the blank result > the Contract Detection Limit but the sample result < the Contract Detection Limit?			✓	
6. Is the LCS result within acceptance criteria?	✓			
7. Is the LCS yield within acceptance criteria?	✓			
8. Is the LCS Minimum Detectable Activity ≤ the Contract Detection Limit?	✓			
9. Do the MS/MSD results and yields meet acceptance criteria?			✓	
10. Do the duplicate sample results and yields meet acceptance criteria?	✓			
D. Other 1. Are all Nonconformances included and noted?			✓	
2. Are all required forms filled out?	✓			
3. Was the correct methodology used?	✓			
4. Was transcription checked?	✓			
5. Were all calculations checked at a minimum frequency?	✓			
6. Were units checked?	✓			

Comments on any "No" response: _____

First Level Review: Jackie Waddell Date: 5/11/00

Second Level Review: [signature] Date: 5/11/00

LS-038, Rev.6, 5/00

STL RICHLAND
Data Review Checklist
RADIOCHEMISTRY

Lot Number: 30D100164				
Client ID: BNI				
Due Date: 5-1-00				
QC Batch Number: 0119277		SDG Number: W03143		
Method Test Parameter: Tc-99				
Matrix: Other				
Review Item	Yes (√)	No (√)	N/A (√)	2nd Level Review (√)
A. Calibration 1. Is the calibration documentation included where applicable?			✓	✓
B. Sample Analysis 1. Are the sample yields within acceptance criteria?			✓	
2. Were all sample holding times met?	✓			
3. Is the sample Minimum Detectable Activity < the Contract Detection Limit?	✓			
C. QC Samples 1. Is the blank yield within acceptance criteria?			✓	
2. Is the Minimum Detectable Activity for the blank result ≤ the Contract Detection Limit?	✓			
3. Does the blank result meet the Contract criteria?	✓			
4. Is the blank result < the Contract Detection Limit?	✓			
5. Is the blank result > the Contract Detection Limit but the sample result < the Contract Detection Limit?			✓	
6. Is the LCS result within acceptance criteria?	✓			
7. Is the LCS yield within acceptance criteria?			✓	
8. Is the LCS Minimum Detectable Activity ≤ the Contract Detection Limit?	✓			
9. Do the MS/MSD results and yields meet acceptance criteria?	✓			
10. Do the duplicate sample results and yields meet acceptance criteria?	✓			
D. Other 1. Are all Nonconformances included and noted?			✓	
2. Are all required forms filled out?	✓			
3. Was the correct methodology used?	✓			
4. Was transcription checked?	✓			
5. Were all calculations checked at a minimum frequency?	✓			
6. Were units checked?	✓			

Comments on any "No" response: _____

First Level Review: Pamela Kennedy Date: 5-16-00

Second Level Review: Jacqueline Waddell Date: 5/22/00

LS-038, Rev.6, 5/00

Quanterra

Data Review Checklist
RADIOCHEMISTRY

Lot Number: JQD1001604				
Client ID: BHI				
Due Date: 5-1-00				
QC Batch Number: 0119279		SDG Number: 3143		
Method Test Parameter: Tritium				
Matrix: Other (Resin)				
Review Item	Yes (√)	No (√)	N/A (√)	2nd Level Review (√)
A. Calibration 1. Is the calibration documentation included where applicable?			✓	
B. Sample Analysis 1. Are the sample yields within acceptance criteria?			✓	
2. Were all sample holding times met?			✓	
3. Is the sample Minimum Detectable Activity < the Contract Detection Limit?	✓			
C. QC Samples 1. Is the blank yield within acceptance criteria?			✓	
2. Is the Minimum Detectable Activity for the blank result ≤ the Contract Detection Limit?	✓			
3. Does the blank result meet the Contract criteria?	✓			
4. Is the blank result < the Contract Detection Limit?	✓			
5. Is the blank result > the Contract Detection Limit but the sample result < the Contract Detection Limit?			✓	
6. Is the LCS result within acceptance criteria?	✓			
7. Is the LCS yield within acceptance criteria?			✓	
8. Is the LCS Minimum Detectable Activity ≤ the Contract Detection Limit?	✓			
9. Do the MS/MSD results and yields meet acceptance criteria?			✓	
10. Do the duplicate sample results and yields meet acceptance criteria?	✓			
D. Other 1. Are all Nonconformances included and noted?			✓	
2. Are all required forms filled out?	✓			
3. Was the correct methodology used?	✓			
4. Was transcription checked?	✓			
5. Were all calculations checked at a minimum frequency?	✓			
6. Were units checked?	✓			

Comments on any "No" response: _____

First Level Review: Jackie Waddell Date: 5/6/00

Second Level Review: [signature] Date: 5/8/00

0021

CHAIN OF CUSTODY

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B99-029-44	Page 1 of 1
Collector Fahlberg	**Company Contact** T Pickett **Telephone No.** 373-4630	**Project Coordinator** TRENT, SJ	**Price Code** 9N **Data Turnaround** 45 Days
Project Designation 100-KR-4 Pump & Treat - Resin Sampling	**Sampling Location** 100-KR-4	**SAF No.** B99-029	**Air Quality** ☐
Ice Chest No. ERC 96-072	**Field Logbook No.** EL 1424 **COA** R10KR4C570	**Method of Shipment** Fed EX	
Shipped To Quanterra Incorporated	**Offsite Property No.** NA	**Bill of Lading/Air Bill No.** NA	

POSSIBLE SAMPLE HAZARDS/REMARKS
NONE

Special Handling and/or Storage
NONE

W03143 **SAMPLE ANALYSIS** JOD100164

Sample No.	Matrix *	Sample Date	Sample Time	Preservation	None	None	None	None	None	Cool 4C	Cool 4C	None	None	
				Type of Container	G/P	G/P	aG	aG	aG	aG	aG	aG	aG	
				No. of Container(s)	1	1	1	1	1	1	1	1	1	
				Volume	For 4.000 ~~10g~~ 60ml	For 4.000 ~~20g~~ 60ml	60mL	60mL	120mL	250mL	250mL	250mL	500mL	
					Strontium-89,90 -- Total Sr	Activity Scan	Isotopic Uranium	Technetium-99	Tritium - H3	Semi-VOA - 8270A (TCL) {Bis(2-ethylhexyl) phthalate}	See item (1) in Special Instructions.	IC Anions - 300.0 {Nitrogen in Nitrate}	See item (2) in Special Instructions.	
B0Y0H7	Other Solid	4.7.00	0852		X	X	X	X	X	X	X	X	X	OH5

CHAIN OF POSSESSION — **Sign/Print Names**

Relinquished By	Date/Time	Received By	Date/Time
R Fahlberg R. Fahlberg	4.7.00 1330	R. Thoren	4.7.00 1330
R. Thoren	4.10.00 1355	[illegible]	4-10-00 1355

SPECIAL INSTRUCTIONS
SAMPLE ORIGINATED IN NON CONTROLLED RADIOLOGICAL AREA. <2000 PCI/G. NO TA REQUIRED

(1) VOA - 8260A (TCL) {Chloroform, Methylenechloride}; VOA - 8260A (Add-On) {Trichloromonofluoromethane}
(2) Metals by ICP (TCLP) - 1311/6010 {Arsenic, Barium, Cadmium, Chromium, Lead, Selenium, Silver}; Metals by ICP (TCLP) Add-on - 1311/6010 {Antimony, Beryllium, Nickel}

Matrix *
S=Soil
SE=Sediment
SO=Solid
S=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

BHI-EE-011 (10/99)

0023

Figure 1. Sample Check-in List

Date/Time Received: 4-10-00 1355 SDG#: JOD100164

Work Order Number: WO 9143 SAF#: B99-028 / B99-029

Shipping Container ID: ERC 96-072 Chain of Custody #: B99-028-35 / B99-029-4

1. Outermost shipping container damaged? Yes [ ] No [✓]

2. Custody Seals on shipping container intact? Yes [✓] No [ ]

3. Custody Seals dated and signed? Yes [✓] No [ ]

4. Chain-of-Custody record present? Yes [✓] No [ ]

5. Chain-of-Custody includes the following information:
   - Client name Yes [✓] No [ ]
   - Project name or number Yes [✓] No [ ]
   - Sample date/time for each sample Yes [✓] No [ ]
   - Container types, sizes and number of containers Yes [✓] No [ ]
   - Short description of sample, i.e., matrix Yes [✓] No [ ]
   - Analyses requested Yes [✓] No [ ]
   - Preservation used or "none" or N/A if not applicable Yes [✓] No [ ]
   - Date and time of relinquish and receipt Yes [✓] No [ ]
   - Signatures of those persons relinquishing and receiving Yes [✓] No [ ]

6. Sample numbers on chain of custody match those on sample containers? 18 Yes [✓] No [ ]

7. Collection date and date of laboratory receipt are within project specific holding time requirements? Yes [✓] No [ ]

8. Cooler temperature: _____

9. Vermiculite/packing materials is: Wet [ ] Dry [ ]

10. Samples have: ✓ tape ____ hazard labels ✓ custody seals ✓ appropriate sample labels

11. Samples are: ✓ in good condition ____ leaking ____ broken ____ have air bubbles

12. Were any anomalies identified in sample receipt? Yes [ ] No [ ]

13. Description of anomalies (include sample numbers): _____

Sample Custodian/Laboratory: [signature] Date: 4-10-00

Telephone/Fax/E:mailed to: _____ On _____ By _____

Client Sample Screening Results

11-Apr-00

4/11/00

CLIENT CODE	ID	MATRIX	RECEIVED	DETECTOR	ACQ DATE	SAMPLE	MINUTES	CNTS A	NET CPM A	CNTS B	NET CPM B
BHI	B0Y0F5DAP45		4/11/2000 11:16:00 AM	QUAD21B	4/11/2000 3:05:30 PM	B0Y0F5DAP45	30	11	0.191666667	62	1.07333333
	DAP45	SOLID		Bkg:	4/11/2000 1:33:00 AM	BKG	600	105	0.175	596	0.99333333

Anl Date:	4/11/00	Tot Sa, Alq:	2.07E+02	, 1.13E+02	Alp;	(Dpm/	1.38E+00	(uCi/	1.14E-03	(pCi/	5.49E+00	± 5.1E+00	CAT I	9.1E+00	Lab Alq L/g
Ppt mg:	113.1	Units:	g	, mg	Bet;	Alq):	2.33E+00	Sa):	1.92E-03	L/g):	9.27E+00	± 2.5E+00		1.1E+01	

CLIENT CODE	ID	MATRIX	RECEIVED	DETECTOR	ACQ DATE	SAMPLE	MINUTES	CNTS A	NET CPM A	CNTS B	NET CPM B
BHI	B0Y0H7DAP4K		4/11/2000 11:16:00 AM	QUAD21C	4/11/2000 3:05:30 PM	B0Y0H7DAP4K	30	11	0.251666667	51	0.79333333
	DAP4K	SOLID		Bkg:	4/11/2000 1:33:00 AM	BKG	600	69	0.115	544	0.90666667

Anl Date:	4/11/00	Tot Sa, Alq:	1.42E+02	, 1.15E+02	Alp;	(Dpm/	1.83E+00	(uCi/	1.02E-03	(pCi/	7.17E+00	± 4.9E+00	CAT I	7.0E+00	Lab Alq L/g
Ppt mg:	115	Units:	g	, mg	Bet;	Alq):	1.63E+00	Sa):	9.10E-04	L/g):	6.39E+00	± 2.2E+00		1.6E+01	

RQC053

Parent Batch:
Associated Batches:
:
:
:
:

Severn Trent Laboratories, Inc.
Information Sheet Rad Prep

****
* *
* QC BATCH: 0119276 *
* *
****

Run Date: 4/28/00
Time: 12:05:50

SR: Uranium-234,235,238 by Alpha Spec
7W: UIso PrpRC5016, SepRC5079(5039)
5I: CLIENT: HANFORD

Analytical Due Date: 5/01/00
Project Manager: JW2

Lot# / Work Order	Client	Analyt Matrix	Due / Aliquot	Client Name / Geometry	Count Time	Mid/Ave Date/Time	Tracer ID / Spike ID	CRDL	Units	Screen Info - (Ci) Alpha	Beta	PM Bin
J0D100164-001			5/01/00	Bechtel Hanford,								JW2
DAP4K-1-01	OTHER	SOLID	.0000		.000	4/07/00 8:52		1.00E+00	pCi/g	7.17E-12 44	6.39E-12 04/00	
Comments:												
J0D100164-001 X			5/01/00	Bechtel Hanford,								JW2
DAP4K-1-06	OTHER	SOLID	.0000		.000	4/07/00 8:52		1.00E+00	pCi/g	7.17E-12 44	6.39E-12 04/00	
Comments:												
J0D280000-276 B			5/01/00	Bechtel Hanford,								JW2
DCHNT-1-01	BIOLOGICAL					4/07/00 8:52		1.00E+00	pCi/g	**NA	**NA	
Comments:												
J0D280000-276 C			5/01/00	Bechtel Hanford,								JW2
DCHNT-1-02	BIOLOGICAL					4/07/00 8:52			pCi/g	**NA	**NA	
Comments:												

Total Number of Samples In Batch: 00004

Batch Information: Dry Wt: ? Decay Correct: Y Blank Sub: None Call In:

Uncert: Both Sigma: 1.960 ODR: Target List + Other Detected

	BLANK CRDL	Tracer Yield	Type	QC Control Limits
Uranium 234	1.00E+00		RPD	
Uranium 238	1.00E+00		RPD	

** NYS = Not Yet Screened
** NA = Not Applicable
** Other = Other than Gross Alpha or Gross Beta
++ Indicates that Batch Information has changed for this sample. Print worksheet for details.

Quanterra

COC Signature Page

W03143

Lot or Batch #: 0119276	Initials/Date	Procedure #
Released By	BWK 4-28-00	RICHRC0009
Received	[illegible] 4-28-00	RICRC 5016
Released By	[illegible] 5-01-00	n/a
Received	SL 5/1/00	RC5016
Released By	SJC 5/3/00	n/a
Received	[illegible] 5/3/00	RC 5079
Released By	[illegible] 05-04-00	n/a
Received	SD 5/4/00	RC5039-2
Released By	SD 5/5/00	n/a
Received	CS 5/6/00	RICHRC0008R5
Released By	CS 5/9/00	n/a
Received	JMS 5-00	Radcalc V2.8.2
Released By	JMS 5-00	n/a
Received	JW 5/9/00	RICHRC0002/2
Released	JW 5/10/00	

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RQC053

Parent Batch:
Associated Batches:
:
:
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:

Severn Trent Laboratories, Inc.
Information Sheet Rad Prep

****
* *
* QC BATCH: 0119278 *
* *
****

W03143

TH: Total Strontium by GPC
CI: Sr-Total PrpRc5016, SepRC5006
5I: CLIENT: HANFORD

Run Date: 4/28/00
Time: 12:07:06

Page: 1

Analytical Due Date: 5/01/00
Project Manager: JW2

Lot# / Work Order	Client	Analyt Matrix	Due / Aliquot	Client Name / Geometry	Count Time	Mid/Ave Date/Time		Tracer ID / Spike ID	CRDL	Units	Screen Info - (Ci) Alpha	Beta	PM Bin
J0D100164-001			5/01/00	Bechtel Hanford,									JW2
DAP4K-1-03	OTHER	SOLID	.0000		.000	4/07/00	8:52		1.00E+00	pCi/g	7.17E-12 44	6.39E-12 04/00	
Comments:													
J0D100164-001 X			5/01/00	Bechtel Hanford,									JW2
DAP4K-1-09	OTHER	SOLID	.0000		.000	4/07/00	8:52		1.00E+00	pCi/g	7.17E-12 44	6.39E-12 04/00	
Comments:													
J0D280000-278 B			5/01/00	Bechtel Hanford,									JW2
DCHP1-1-01	BIOLOGICAL					4/07/00	8:52		1.00E+00	pCi/g	**NA	**NA	
Comments:													
J0D280000-278 C			5/01/00	Bechtel Hanford,									JW2
DCHP1-1-02	BIOLOGICAL					4/07/00	8:52			pCi/g	**NA	**NA	
Comments:													

Total Number of Samples In Batch: 00004

Batch Information: Dry Wt: ? Decay Correct: Y Blank Sub: None Call In:
Uncert: Both Sigma: 1.960 ODR: Target List + Other Detected

	BLANK CRDL	Tracer Yield	Type	QC Control Limits
			RPD	
Strontium	1.00E+00			

** NYS = Not Yet Screened
** NA = Not Applicable
** Other = Other than Gross Alpha or Gross Beta
++ Indicates that Batch Information has changed for this sample. Print worksheet for details.

0028

Quanterra

COC Signature Page

WO3143

Lot or Batch #: 0119078

	Initials/Date	Procedure #
Released By	BMK 4-28-00	RICHRC00009
Received	[illegible] 4-29-00	RichRC 5016
Released By	[illegible] 5-01-00	n/a
Received	SR 5/1/00	RC5016
Released By	SC 5/3/00	n/a
Received	RTM 5/8/00	RichRC5006
Released By	RTM 5/9/00	n/a
Received	DLD 5/9/2000	RICHRD0003Rev2
Released By	~~5/10/00~~ CS 5/11/00 CS 5/11/00	n/a
Received	JMS-11-00	RADRAD V2.8.2.1
Released By	JMS-11-00	n/a
Received	JW5/11/00	RICHRC00012
Released By	JW5/11/00	n/a
Received		

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RQC053

Severn Trent Laboratories, Inc.
Information Sheet Rad Prep

Run Date: 5/02/00
Time: 12:48:00

Page: 1

Parent Batch:
Associated Batches:
:
:
:
:

****
* *
* QC BATCH: 0119277 *
* *
****

S5: Technetium-99 by Liquid Scint
AO: Tc-99 Prp/SepRC5016/5078
5I: CLIENT: HANFORD

Analytical Due Date: 5/01/00
Project Manager: JW2

Lot# / Work Order	Client	Matrix	Analyt Due / Aliquot	Client Name / Geometry	Count Time	Mid/Ave Date/Time	Tracer ID / Spike ID	CRDL	Units	Screen Info - (Ci) Alpha	Beta	PM Bin
J0D100164-001 DAP4K-1-02	OTHER	SOLID	5/01/00 .0000	Bechtel Hanford,	.000	4/07/00 8:52		1.50E+01	pCi/g	7.17E-12 44 04/00	6.39E-12	JW2
Comments:												
J0D100164-001 S DAP4K-1-07	OTHER	SOLID	5/01/00 .0000	Bechtel Hanford,	.000	4/07/00 8:52			pCi/g	7.17E-12 44 04/00	6.39E-12	JW2
Comments:												
J0D100164-001 X DAP4K-1-08	OTHER	SOLID	5/01/00 .0000	Bechtel Hanford,	.000	4/07/00 8:52		1.50E+01	pCi/g	7.17E-12 44 04/00	6.39E-12	JW2
Comments:												
J0D280000-277 B DCHNW-1-01	BIOLOGICAL		5/01/00	Bechtel Hanford,		4/07/00 8:52		1.50E+01	pCi/g	**NA	**NA	JW2
Comments:												
J0D280000-277 C DCHNW-1-02	BIOLOGICAL		5/01/00	Bechtel Hanford,		4/07/00 8:52			pCi/g	**NA	**NA	JW2
Comments:												
J0D280000-277 B DCHNW-1-03	BIOLOGICAL		5/01/00	Bechtel Hanford,		4/07/00 8:52		1.50E+01	pCi/g	**NA	**NA	JW2
Comments:												

Total Number of Samples In Batch: 00006

Batch Information: Dry Wt: ? Decay Correct: Y Blank Sub: None Call In:

Uncert: Both Sigma: 1.960 ODR: Target List + Other Detected

BLANK CRDL		Tracer Yield	Type	QC Control Limits
Technetium 99	1.50E+01		RPD	

** NYS = Not Yet Screened
** NA = Not Applicable
** Other = Other than Gross Alpha or Gross Beta
++ Indicates that Batch Information has changed for this sample. Print worksheet for details.

0030

Quanterra

COC Signature Page

U503143

Lot or Batch #: OD19077

	Initials/Date	Procedure #
Released By	PMK 4-28-00	RICHRC0009
Received	[illegible] 4-28-00	RICHRC 5016
Released By	[illegible] 501-00	n/a
Received	RB 5-1-00	RC5078
Released By	AB 5-11-00	n/a
Received	[illegible] 5/11/00	RICHRC0001
Released By	[illegible] 5/13/00	n/a
Received	JM 5-15-00	RADCALC V2.8.2.1
Released By	JM5-15-00	n/a
Received	PK5-15-00	RICHRC0002
Released By	PK5-16-00	n/a
Received		
Released By		n/a
Received		

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RQC053

Parent Batch:
Associated Batches:
:
:
:
:

Severn Trent Laboratories, Inc.
Information Sheet Rad Prep

****
* QC BATCH: 0119279 *
****

Run Date: 5/01/00
Time: 14:42:44

S6: Tritium by Liquid Scint
AT: H-3 Prp/SepRC5037
5I: CLIENT: HANFORD

Analytical Due Date: 5/01/00
Project Manager: JW2

Lot# / Work Order	Client	Analyt / Matrix	Due / Aliquot	Client Name / Geometry	Count Time	Mid/Ave Date/Time	Tracer ID / Spike ID	CRDL	Units	Screen Info - (Ci) Alpha	Beta	PM Bin
J0D100164-001 X DAP4K-1-0A	OTHER	5/01/00 SOLID		Bechtel Hanford, .0000	.000	4/07/00 8:52		400	pCi/g	7.17E-12 44	6.39E-12 04/00	JW2
Comments:												
J0D100164-001 DAP4K-1-04	OTHER	5/01/00 SOLID		Bechtel Hanford, .0000	.000	4/07/00 8:52		400	pCi/g	7.17E-12 44	6.39E-12 04/00	JW2
Comments:												
J0D280000-279 B DCHP3-1-01		5/01/00 BIOLOGICAL		Bechtel Hanford,		4/07/00 8:52		400	pCi/g	**NA	**NA	JW2
Comments:												
J0D280000-279 C DCHP3-1-02		5/01/00 BIOLOGICAL		Bechtel Hanford,		4/07/00 8:52			pCi/g	**NA	**NA	JW2
Comments:												
J0D280000-279 B DCHP3-1-03		5/01/00 BIOLOGICAL		Bechtel Hanford,		4/07/00 8:52		400	pCi/g	**NA	**NA	JW2
Comments:												

Total Number of Samples In Batch: 00005

Batch Information: Dry Wt: Decay Correct: Y Blank Sub: None Call In:

Uncert: Both Sigma: 1.960 ODR: Target List + Other Detected

BLANK CRDL		Tracer Yield	Type	QC Control Limits
Tritium	400		RPD	

** NYS = Not Yet Screened
** NA = Not Applicable
** Other = Other than Gross Alpha or Gross Beta
++ Indicates that Batch Information has changed for this sample. Print worksheet for details.

Quanterra

COC Signature Page

WO3143

Lot or Batch #: 0119279

	Initials/Date	Procedure #
Released By	BWK 4-28-00	RICHRC0009
Received	am 4-28-00	RICHRC 5057
Released By	am 5-1-00	n/a
Received	CO 5/1/00	KOLMKDOWN
Released By	CO 5/3/00	n/a
Received	am 5-5-00	Radcalc V2.8.2
Released By	JM 5-5-00	n/a
Received	JN 5/5/00	RICHRC00022
Released By	JN 5/6/00	n/a
Received		
Released By		n/a
Received		
Released By		n/a
Received		

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CASE NARRATIVE

Bechtel Hanford Incorporated
3350 George Washington Way
Richland, Washington 99352

May 15, 2000

Attention: Joan Kessner

Project Number	:	35632
SDG	:	W03143
SAF	:	B99-029
Number of Samples	:	one (1)
Sample Matrix	:	Soil
Data Deliverable	:	Summary
Date SDG Closed	:	April 24, 2000

II. Introduction

On April 10, 2000, one (1) "soil" sample was received by Quanterra, Richland and transferred to Quanterra, St. Louis for chemical analysis. The samples were received at the St. Louis lab on 4/11/00 at 2 degrees C. See the attached Sample Summary form for the Lab ID's and corresponding Client Ids.

III. Analytical Results/ Methodology

The analytical results for this report are presented by analytical test. Each set of data includes sample identification information, analytical results and the appropriate detection limits.

Analyses requested:	TCLP ICP Metals – 1311/6010 + add ons VOA – 8260 (TCL) Chloroform, Methylene Chloride + add on Trichlorofluoromethane BNA – 8270C (TCL) bis-2-ethylhexyl phthalate IC Anions – 300.0 Nitrogen in Nitrate
Deviation from Request:	None

IV. Definitions

The following codes are used to denote laboratory quality control samples and can be found in the data summary section of this report:

QCBLK- Quality Control Blank, Method Blank
QCLCS- Quality Control Laboratory Control Sample, Blank Spike
MS- Matrix Spike.
DUP- Matrix Duplicate
MSD- Matrix Spike Duplicate.

V. Comments

General: The term "Detection Limit" used in the analytical data reports refers to either the lab's standard reporting limits or contractually required reporting limits, whichever is applicable.

Please refer to the attached cross-reference table for the standard preparation methods used at Quanterra, St. Louis.

Metals: A Laboratory Control Sample, Method Blank, Matrix Spike and Matrix Spike Duplicate were analyzed with each preparation batch per the protocol for this analysis.

The Antimony ICSA solution was recovered above the control limit at 84 ug/l (the limit is 60 ug/l). The blank, LCS and MS/MSD all met QC criteria. The data is being reported with non-conformance memo F00269.

A Cadmium continuing calibration blank was outside the control limits (< 5 ug/l) with a result of 5 ug/l. All samples bracketed by this blank were non-detects. The data is reported with non-conformance memo F00268.

Anions: A Laboratory Control Sample, Method Blank, Matrix Spike and Matrix Duplicate were analyzed with each preparation batch per the protocol for this analysis.

There were no comments or non-conformances associated with the PCB data.

BNA: A Laboratory Control Sample, Matrix Spike, Matrix Spike Duplicate and a Method Blank were analyzed with each preparation batch per the protocol for this analysis.

The surrogate 2,4,6-Tribromophenol had low recovery in the sample and its MS/MSD. The surrogate had acceptable recoveries in the blank and LCS indicating a sample matrix problem. No further action is required.

Several compounds were outside control limits in the MS. The compounds were in control in the LCS. No corrective action is required.

VOA: A Laboratory Control Sample, Method Blank, Matrix Spike and Matrix Spike Duplicate were analyzed with each preparation batch per the protocol for this analysis.

The surrogate Toluene-d8 had high recovery in the sample, the MS and the MSD. This surrogate had acceptable recovery in the blank and LCS, indicating a sample matrix problem. The compound Toluene was high in the MS/MSD. LCS recoveries were within criteria. No further corrective action is required.

I certify that this Summary is in compliance with the SOW, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hard copy data package has been authorized by the Laboratory Manager or a designee, as verified by the following signature.

Reviewed and approved:

Marti Ward
St. Louis Project Manager

Clouseau Nonconformance Memo

SEVERN TRENT SERVICES

NCM #:	F00268	Classification:	Deficiency
NCM Initiated By:	Kao, Ed	Status:	PMREVIEW
Date Opened:	04/24/00	Production Area:	Metals
Date Closed:	N/A	Tests:	6010B
		Lot #'s (Sample #'s):	F0D030134 (3); F0D050236 (12,17); F0D080155 (1); F0D110195 (1); F0D110199 (1); F0D120227 (1); F0D120233 (1)
		QC Batch:	0108226
Nonconformance:	QC data exceeded criteria		
Subcategory:	Other (explanation required)		

Problem Description / Root Cause

Name	Date	Description
Kao, Ed	04/24/00	The CCB for cadmium is outside of control limits at 5ppb (RL 5ppb). However, all associated samples were ND with suspected high bias.

Corrective Action

Name	Date	Corrective Action
Kleszczewski, Jim	04/27/00	QA will hold a meeting with metals group leader on 5/2/00 to discuss the QC decision making process as it relates to data acceptance.

Quality Assurance Verification

Verified By	Due Date	Status	Notes:
Kleszczewski, Jim	05/02/00	Pending	

Client Notification Summary

Client	Project Manager	Date Notified	Response Date	How Notified
TETRA TECH EM INC.	Loeb, Mark	04/25/00	04/25/00	by narrative

Response	Response Details
Process "as-is"	

Approval History

Name	Date Approved:	Position
Kao, Ed	04/24/00	Group Leader
Loeb, Mark	04/25/00	Project Manager

Date Printed: 04/27/00

Clouseau Nonconformance Memo

SEVERN TRENT SERVICES

NCM #:	F00269	Classification:	Deficiency
NCM Initiated By:	Kao, Ed	Status:	PMREVIEW
Date Opened:	04/24/00	Production Area:	Metals
Date Closed:	N/A	Tests:	6010B
		Lot #'s (Sample #'s):	F0D050236 (12,17); F0D120227 (1); F0D120233 (1)
		QC Batch:	0108226
Nonconformance:	QC data exceeded criteria		
Subcategory:	Other (explanation required)		

Problem Description / Root Cause

Name	Date	Description
Kao, Ed	04/24/00	The ICSA solution for antimony is outside of control limits at 84ppb (RL 50ppb). However, there were insignificant levels of interfering elements to affect the results.

Corrective Action

Name	Date	Corrective Action
Kleszczewski, Jim	04/27/00	QA will hold a meeting with metals group leader on 5/2/00 to discuss the QC decision making process as it relates to data acceptance.

Quality Assurance Verification

Verified By	Due Date	Status	Notes:
Kleszczewski, Jim	05/02/00	Pending	

Approval History

Name	Date Approved:	Position
Kao, Ed	04/24/00	Group Leader
Kleszczewski, Jim	04/27/00	Quality Assurance

Date Printed: 04/27/00

SAMPLE SUMMARY

F0D120233

WO #	SAMPLE#	CLIENT SAMPLE ID	DATE	TIME
DAT3P	001	B0Y0H7	04/07/00	08:52

NOTE(S):

- The analytical results of the samples listed above are presented on the following pages.
- All calculations are performed before rounding to avoid round-off errors in calculated results.
- Results noted as "ND" were not detected at or above the stated limit.
- This report must not be reproduced, except in full, without the written approval of the laboratory.
- Results for the following parameters are never reported on a dry weight basis: color, corrosivity, density, flashpoint, ignitability, layers, odor, paint filter test, pH, porosity pressure, reactivity, redox potential, specific gravity, spot tests, solids, solubility, temperature, viscosity, and weight.

METHODS SUMMARY

F0D120233

PARAMETER	ANALYTICAL METHOD	PREPARATION METHOD
Inductively Coupled Plasma (ICP) Metals	SW846 6010B	SW846 1311/3010
Nitrate as N	MCAWW 300.0A	MCAWW 300.0A
Semivolatile Organic Compounds by GC/MS	SW846 8270C	SW846 3550B
Volatile Organics by GC/MS	SW846 8260A	SW846 5030/8260

References:

MCAWW "Methods for Chemical Analysis of Water and Wastes", EPA-600/4-79-020, March 1983 and subsequent revisions.

SW846 "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 and its updates.

PSL20300 SEVERN TRENT LABORATORIES, INC Run Date: 4/12/00
Page 1 CLIENT ANALYSIS SUMMARY Time: 14:05:19
STL St. Louis User Id.: WILSONS

CLIENT: 127642 BECHTEL HANFORD, INC. QUOTE/SAR #: 35630
PROJECT MANAGER: MARTI WARD LAB ID: F-0D120227-001
PROJECT #: 100-HR-3 TS WORK ORDER: DAT1J
REPORT TO: Bechtel Hanford, Inc. RECEIVING DATE: 4/10/00
P.O. NUMBER: MRC-SBB-A-19981 SAMPLING DATE: 4/07/00
SITE: B99-028 ANALYTICAL DUE DATE: 5/19/00N
AMOUNT REC'D: 250G,2X500G,LG REPORT DUE DATE: 5/23/00
STORAGE LOC: R20D, V5 SN 442-00 PRIORITY: 39
LOT COMMENTS: SAMPLING TIME: 10:00
MATRIX: SOLID RECEIVING TIME: 13:55
SAMPLE ID: B0Y0F5
QC PACKAGE: Special Report - see checklist SDG# : W03142
SAMPLE COMMENTS:
RUN A DUPLICATE ON ANIONS.
Beginning Depth: .00 **Ending Depth:** .00

***** ANALYSIS *****	WRK LOC	REQUEST DATE	EXTRACTION EXP DATE	ANALYSIS EXP DATE
Volatile Organics, GC/MS (8260A)	06	4/12/00	0/00/00	4/21/00
PURGE AND TRAP - 5 mL purge				
(A-15-MZ-01) DAT1J-1-01 Protocol: A	QC Program: STANDARD TEST SET			
Base/Neutrals and Acids (8270C)	06	4/12/00	4/21/00	5/31/00
SONICATION - Low Level				
(A-13-QL-01) DAT1J-1-04 Protocol: A	QC Program: STANDARD TEST SET			
Inductively Coupled Plasma (6010B)	06	4/12/00	10/04/00	4/02/01
TCLP(1311) -> METALS, TOTAL				
M6010TP AG,AS,BA,BE,CD,CR,NI,PB,SB,SE				
(A-34-QO-01) DAT1J Protocol: A	QC Program: STANDARD TEST SET			
Nitrate as N (300.0, Ion Chromatography)	06	4/12/00	7/15/00	7/17/00
LEACHATE, DI (Routine)				
(A-82-C9-01) DAT1J-1-17 Protocol: A	QC Program: STANDARD TEST SET			

PSL20300 SEVERN TRENT LABORATORIES, INC Run Date: 4/12/00
Page 1 CLIENT ANALYSIS SUMMARY Time: 14:05:19
STL St. Louis User Id.: WILSONS

CLIENT: 127642 BECHTEL HANFORD, INC. QUOTE/SAR #: 35630
PROJECT MANAGER: MARTI WARD LAB ID: F-0D120227-001-D
PROJECT #: 100-HR-3 TS WORK ORDER: DAT1J MSD
REPORT TO: Bechtel Hanford, Inc. RECEIVING DATE: 4/10/00
P.O. NUMBER: MRC-SBB-A-19981 SAMPLING DATE: 4/07/00
SITE: B99-028 ANALYTICAL DUE DATE: 5/19/00N
AMOUNT REC"D: 250G,2X500G,LG REPORT DUE DATE: 5/23/00
STORAGE LOC: R20D, K3 SW 4.12.00 PRIORITY: 39
LOT COMMENTS: SAMPLING TIME: 10:00
MATRIX: SOLID RECEIVING TIME: 13:55
SAMPLE ID: B0Y0F5
QC PACKAGE: Special Report - see checklist SDG# : W03142
SAMPLE COMMENTS:
RUN A DUPLICATE ON ANIONS.
Beginning Depth: .00 **Ending Depth:** .00

***** ANALYSIS *****	WRK LOC	REQUEST DATE	EXTRACTION EXP DATE	ANALYSIS EXP DATE
Volatile Organics, GC/MS (8260A)	06 ✓	4/12/00	0/00/00	4/21/00
PURGE AND TRAP - 5 mL purge				
(A-15-MZ-01) DAT1J-1-03 Protocol: A	QC Program: STANDARD TEST SET			
Base/Neutrals and Acids (8270C)	06 ✓	4/12/00	4/21/00	5/31/00
SONICATION - Low Level				
(A-13-QL-01) DAT1J-1-06 Protocol: A	QC Program: STANDARD TEST SET			
Inductively Coupled Plasma (6010B)	06 ✓	4/12/00	10/04/00	4/02/01
TCLP(1311) -> METALS, TOTAL				
M6010TP AG,AS,BA,BE,CD,CR,NI,PB,SB,SE				
(A-34-QO-01) DAT1J Protocol: A	QC Program: STANDARD TEST SET			
deleted SW Nitrate as N (300.0, Ion Chromatography)	06	4/12/00	7/15/00	7/17/00
LEACHATE, DI (Routine)				
(A-82-C9-01) DAT1J-1-19 Protocol: A	QC Program: STANDARD TEST SET			

PSL20300 SEVERN TRENT LABORATORIES, INC Run Date: 4/12/00
Page 1 CLIENT ANALYSIS SUMMARY Time: 14:05:19
STL St. Louis User Id.: WILSONS

CLIENT: 127642 BECHTEL HANFORD, INC. QUOTE/SAR #: 35630
PROJECT MANAGER: MARTI WARD LAB ID: F-0D120227-001-S
PROJECT #: 100-HR-3 TS WORK ORDER: DAT1J MS
REPORT TO: Bechtel Hanford, Inc. RECEIVING DATE: 4/10/00
P.O. NUMBER: MRC-SBB-A-19981 SAMPLING DATE: 4/07/00
SITE: B99-028 ANALYTICAL DUE DATE: 5/19/00N
AMOUNT REC"D: 250G,2X500G,LG REPORT DUE DATE: 5/23/00
STORAGE LOC: R20D, 4.12.00 PRIORITY: 39
LOT COMMENTS: SAMPLING TIME: 10:00
MATRIX: SOLID RECEIVING TIME: 13:55
SAMPLE ID: B0Y0P5
QC PACKAGE: Special Report - see checklist SDG# : W03142
SAMPLE COMMENTS:
RUN A DUPLICATE ON ANIONS.
Beginning Depth: .00 **Ending Depth:** .00

***** ANALYSIS *****	WRK LOC	REQUEST DATE	EXTRACTION EXP DATE	ANALYSIS EXP DATE
Volatile Organics, GC/MS (8260A)	06	4/12/00	0/00/00	4/21/00
PURGE AND TRAP - 5 mL purge				
(A-15-MZ-01) DAT1J-1-02 Protocol: A	QC Program: STANDARD TEST SET			
Base/Neutrals and Acids (8270C)	06	4/12/00	4/21/00	5/31/00
SONICATION - Low Level				
(A-13-QL-01) DAT1J-1-05 Protocol: A	QC Program: STANDARD TEST SET			
Inductively Coupled Plasma (6010B)	06	4/12/00	10/04/00	4/02/01
TCLP(1311) -> METALS, TOTAL				
M6010TP AG,AS,BA,BE,CD,CR,NI,PB,SB,SE				
(A-34-QO-01) DAT1J Protocol: A	QC Program: STANDARD TEST SET			
~~Nitrate~~ as N (300.0, Ion Chromatography)	06	4/12/00	7/15/00	7/17/00
LEACHATE, DI (Routine)				
(A-82-C9-01) DAT1J-1-18 Protocol: A	QC Program: STANDARD TEST SET			

W03143

FOD120227

STL - St. Louis

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B99-028-35	Page 1 of 1
Collector: Fahlberg	Company Contact: T Pickett — Telephone No.: 373-4630	Project Coordinator: TRENT, SJ	Price Code: 9N — Data Turnaround: 45 Days
Project Designation: 100-HR-3 Pump & Treat - Resin Sampling	Sampling Location: 100-HR-3	SAF No.: B99-028	Air Quality ☐
Ice Chest No.: ERC 96-072	Field Logbook No.: EL-1424 — COA: 810HR3C570	Method of Shipment: Hand Delivered — 401266216 Airborne	
Shipped To: Quanterra Incorporated	Offsite Property No.: NA	Bill of Lading/Air Bill No.: NA	

POSSIBLE SAMPLE HAZARDS/REMARKS
NONE
Quote #35630

Special Handling and/or Storage
NONE

SDG W03142 Use Richland Project Data
SAMPLE ANALYSIS
JOD100159 4/6/00

Sample No.	Matrix *	Sample Date	Sample Time	Preservation	Type of Container	No. of Container(s)	Volume	Activity Scan	Isotopic Uranium	Strontium-89,90 -- Total Sr	Technetium-99	IC Anions - 300.0 (Nitrogen in Nitrate)	Tritium - H3	Semi-VOA - 8270A (TCL) (Bis(2-ethylhexyl) phthalate)	See item (1) in Special Instructions.	See item (2) in Special Instructions	
				None	G/P	1	20g					$78 X		$264 X	$208 X	$170 X	
B0Y0F5 / DAP-5	Other Solid	4-7-00	1000	None	aG	1	60mL	X	X	X	X	X	X	X	X	X	0F6
				None	aG	1	60mL										
				None	aG	1	60mL					MS/Dup		MS/MSD	MS/MSD	MS/MSD	
				None	aG	1	250mL										
				None	aG	1	250mL										
				Cool 4C	aG	1	500mL										
				Cool 4C	aG	1	500mL										
				None	aG	1	1000mL										

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By	Date/Time	Received By	Date/Time
R. Fahlberg / R. Fahlberg	4-7-00 1330	R. Thoren	4-7-00 1330
R. Thoren	4-10-00 1355	PMIC	4-10-00 1355
PMIC	4-10-00 1600		

SPECIAL INSTRUCTIONS
SAMPLE ORIGINATED IN NON CONTROLLED RADIOLOGICAL AREA. < 2000 PCI/G. NO TOTAL ACTIVITY REQUIRED.

(1) VOA - 8260A (TCL) (Chloroform, Methylenechloride); VOA - 8260A (Add-On) (Trichlorofluoromethane) X
(2) Metals by ICP (TCLP) - 1311/6010 (Arsenic, Barium, Cadmium, Chromium, Lead, Selenium, Silver); Metals by ICP (TCLP) Add-on (1311/6010 (Antimony, Beryllium, Nickel) X

Matrix *
S=Soil
SE=Sediment
SO=Solid
S=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

12

RHLEF 011 (10/97)

Quanterra
Environmental Services

Lot No.: FOD120227

Condition Upon Receipt Variance Report
St. Louis Laboratory

Client: Bechtel Hanford

Date: 4.11.00 Time: 11:10

Quote No: 35630 & 35632

Initiated by: [signature]

Shipper/No: Airborne 401266 9216

RFA/COC Numbers: ~~B99-028-44~~ 3V 4.12.00
B99-028-35

Condition/Variance (Check all that apply):

1.	☐	Sample received broken/leaking.	8.	☐	Sample ID on container does not match sample ID on paperwork. Explain:
2.	☐	Sample received without proper preservative.			
	☐	Cooler temperature not within 4°C ± 2°C			
		Record temperature:			
	☐	pH	9.	☐	All coolers on airbill not received with shipment.
	☐	other:	10.	☐	Sample volume insufficient for analysis
3.	☐	Sample received in improper container.	11.	☐	Other (explain below)
4.	☐	Sample received without proper paperwork. Explain:			
5.	☐	Paperwork received without sample.			
6.	☐	No sample ID on sample container.			
7.	☐	Custody tape disturbed/broken/missing/not tamper evident type (circle all that apply).			

☑ **No variances were noted during sample receipt.**

☐ **Cooler Temperature Upon Receipt in °C:** 2°

Temperature Variance Does Not Affect the Following Analyses:

Notes:

Corrective Action:

☐ Client's Name: _____ Informed verbally on: _____ By: _____

☐ Client's Name: _____ Informed in writing on: _____ By: _____

☐ Sample(s) processed "as is".

☐ Sample(s) on hold until: _____ If released, notify: _____

Sample Control Supervisor Review: (or designate) [signature] Date: 4.11.00

Project Management Review: [signature] Date: 4/12/00

SIGNED ORIGINAL MUST BE RETAINED IN THE PROJECT FILE

PSL20300 SEVERN TRENT LABORATORIES, INC Run Date: 4/12/00
Page 1 CLIENT ANALYSIS SUMMARY Time: 14:28:09
STL St. Louis User Id.: WILSONS

CLIENT: 127642 BECHTEL HANFORD, INC. QUOTE/SAR #: 35632
PROJECT MANAGER: MARTI WARD LAB ID: F-0D120233-001
PROJECT #: 100-KR-4 TS WORK ORDER: DAT3P
REPORT TO: Bechtel Hanford, Inc. RECEIVING DATE: 4/10/00
P.O. NUMBER: MRC-SBB-A-19981 SAMPLING DATE: 4/07/00
SITE: B99-029 ANALYTICAL DUE DATE: 5/19/00N
AMOUNT REC"D: 3X350G,500G REPORT DUE DATE: 5/23/00
STORAGE LOC: R20D, V3 3W 4+2 · 00 PRIORITY: 39
LOT COMMENTS: SAMPLING TIME: 8:52
MATRIX: SOLID RECEIVING TIME: 13:55
SAMPLE ID: B0Y0H7
QC PACKAGE: Special Report - see checklist SDG# : W03143
SAMPLE COMMENTS:
RUN A DUPLICATE ON ANIONS.
Beginning Depth: .00 **Ending Depth:** .00

***** ANALYSIS *****	WRK LOC	REQUEST DATE	EXTRACTION EXP DATE	ANALYSIS EXP DATE
Volatile Organics, GC/MS (8260A)	06	4/12/00	0/00/00	4/21/00
PURGE AND TRAP - 5 mL purge				
(A-15-MZ-01) DAT3P-1-01 Protocol: A	QC Program: STANDARD TEST SET			
Base/Neutrals and Acids (8270C)	06	4/12/00	4/21/00	5/31/00
SONICATION - Low Level				
(A-13-QL-01) DAT3P-1-04 Protocol: A	QC Program: STANDARD TEST SET			
Inductively Coupled Plasma (6010B)	06	4/12/00	10/04/00	4/02/01
TCLP(1311) -> METALS, TOTAL				
M6010TP AG,AS,BA,BE,CD,CR,NI,PB,SB,SE				
(A-34-QO-01) DAT3P Protocol: A	QC Program: STANDARD TEST SET			
Nitrate as N (300.0, Ion Chromatography)	06	4/12/00	7/15/00	7/17/00
LEACHATE, DI (Routine)				
(A-82-C9-01) DAT3P-1-17 Protocol: A	QC Program: STANDARD TEST SET			

PSL20300 SEVERN TRENT LABORATORIES, INC Run Date: 4/12/00
Page 1 CLIENT ANALYSIS SUMMARY Time: 14:28:09
STL St. Louis User Id.: WILSONS

CLIENT: 127642 BECHTEL HANFORD, INC. QUOTE/SAR #: 35632
PROJECT MANAGER: MARTI WARD LAB ID: F-0D120233-001-D
PROJECT #: 100-KR-4 TS WORK ORDER: DAT3P MSD
REPORT TO: Bechtel Hanford, Inc. RECEIVING DATE: 4/10/00
P.O. NUMBER: MRC-SBB-A-19981 SAMPLING DATE: 4/07/00
SITE: B99-029 ANALYTICAL DUE DATE: 5/19/00N
AMOUNT REC"D: 3X350G,500G REPORT DUE DATE: 5/23/00
STORAGE LOC: R20D/V3 PRIORITY: 39
LOT COMMENTS: SAMPLING TIME: 8:52
MATRIX: SOLID RECEIVING TIME: 13:55
SAMPLE ID: B0Y0H7
QC PACKAGE: Special Report - see checklist SDG# : W03143
SAMPLE COMMENTS:
RUN A DUPLICATE ON ANIONS.
Beginning Depth: .00 **Ending Depth:** .00

***** ANALYSIS *****	WRK LOC	REQUEST DATE	EXTRACTION EXP DATE	ANALYSIS EXP DATE
Volatile Organics, GC/MS (8260A) PURGE AND TRAP - 5 mL purge (A-15-MZ-01) DAT3P-1-03 Protocol: A QC Program: STANDARD TEST SET	06	4/12/00	0/00/00	4/21/00
Base/Neutrals and Acids (8270C) SONICATION - Low Level (A-13-QL-01) DAT3P-1-06 Protocol: A QC Program: STANDARD TEST SET	06	4/12/00	4/21/00	5/31/00
Inductively Coupled Plasma (6010B) TCLP(1311) -> METALS, TOTAL M6010TP AG,AS,BA,BE,CD,CR,NI,PB,SB,SE (A-34-QO-01) DAT3P Protocol: A QC Program: STANDARD TEST SET	06	4/12/00	10/04/00	4/02/01
Nitrate as N (300.0, Ion Chromatography) LEACHATE, DI (Routine) (A-82-C9-01) DAT3P-1-19 Protocol: A QC Program: STANDARD TEST SET	06	4/12/00	7/15/00	7/17/00

PSL20300 SEVERN TRENT LABORATORIES, INC Run Date: 4/12/00
Page 1 CLIENT ANALYSIS SUMMARY Time: 14:28:09
STL St. Louis User Id.: WILSONS

CLIENT: 127642 BECHTEL HANFORD, INC. QUOTE/SAR #: 35632
PROJECT MANAGER: MARTI WARD LAB ID: F-0D120233-001-S
PROJECT #: 100-KR-4 TS WORK ORDER: DAT3P MS
REPORT TO: Bechtel Hanford, Inc. RECEIVING DATE: 4/10/00
P.O. NUMBER: MRC-SBB-A-19981 SAMPLING DATE: 4/07/00
SITE: B99-029 ANALYTICAL DUE DATE: 5/19/00N
AMOUNT REC"D: 3X350G,500G REPORT DUE DATE: 5/23/00
STORAGE LOC: R20D,03 sv 4.12.00 PRIORITY: 39
LOT COMMENTS: SAMPLING TIME: 8:52
MATRIX: SOLID RECEIVING TIME: 13:55
SAMPLE ID: B0Y0H7
QC PACKAGE: Special Report - see checklist SDG# : W03143
SAMPLE COMMENTS:
RUN A DUPLICATE ON ANIONS.
Beginning Depth: .00 **Ending Depth:** .00

***** ANALYSIS *****	WRK LOC	REQUEST DATE	EXTRACTION EXP DATE	ANALYSIS EXP DATE
Volatile Organics, GC/MS (8260A) PURGE AND TRAP - 5 mL purge (A-15-MZ-01) DAT3P-1-02 Protocol: A QC Program: STANDARD TEST SET	06	4/12/00	0/00/00	4/21/00
Base/Neutrals and Acids (8270C) SONICATION - Low Level (A-13-QL-01) DAT3P-1-05 Protocol: A QC Program: STANDARD TEST SET	06	4/12/00	4/21/00	5/31/00
Inductively Coupled Plasma (6010B) TCLP(1311) -> METALS, TOTAL M6010TP AG,AS,BA,BE,CD,CR,NI,PB,SB,SE (A-34-QO-01) DAT3P Protocol: A QC Program: STANDARD TEST SET	06	4/12/00	10/04/00	4/02/01
Nitrate as N (300.0, Ion Chromatography) LEACHATE, DI (Routine) (A-82-C9-01) DAT3P-1-18 Protocol: A QC Program: STANDARD TEST SET	06	4/12/00	7/15/00	7/17/00

cur 319

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST		B99-029-44	Page 1 of 1
Collector: Fahlberg	Company Contact: T Pickett	Telephone No.: 373-4630	Project Coordinator: TRENT, SJ	Price Code: 9N; Data Turnaround: 45 Days; Air Quality: [ ]
Project Designation: 100-KR-4 Pump & Treat - Resin Sampling	Sampling Location: 100-KR-4		SAF No.: B99-029	
Ice Chest No.: ERC 96-072	Field Logbook No.: EL 1424	COA: R10KR4C570	Method of Shipment: Fed EX 401266921 6 Airborne	
Shipped To: Quanterra Incorporated	Offsite Property No.: NA		Bill of Lading/Air Bill No.: NA	

POSSIBLE SAMPLE HAZARDS/REMARKS: NONE

Special Handling and/or Storage: NONE

W03143 SAMPLE ANALYSIS JOD100164

Sample No.	Matrix *	Sample Date	Sample Time	Preservation	Type of Container	No. of Container(s)	Volume	Strontium-89,90 – Total Sr	Activity Scan	Isotopic Uranium	Technetium-99	Tritium - H3	Semi-VOA - 8270A (TCL) [Bis(2-ethylhexyl) phthalate]	See item (1) in Special Instructions.	IC Anions - 300.0 (Nitrogen in Nitrate)	See item (2) in Special Instructions.	
				None	G/P	1	4 L 60mL										
				None	G/P	1	4 L 60mL										
				None	aG	1	60mL										
				None	aG	1	60mL										
				None	aG	1	120mL										
				Cool 4C	aG	1	250mL										
				Cool 4C	aG	1	250mL										
				None	aG	1	250mL										
				None	aG	1	500mL										
B0Y0H7	Other Solid	4-7-00	0852					X	X	X	X	X	X	X	X	X	OHS
													100 % full				

CHAIN OF POSSESSION

Relinquished By	Date/Time	Received By	Date/Time
R Fahlberg	4-7-00 1330	R. Thoren	4-7-00 1330
R. Thoren	4-10-00 1355	[illegible]	4-10-00 1355
[illegible]	4-10-00 1600	[illegible]	4-11-00 11:1[illegible]

SPECIAL INSTRUCTIONS

SAMPLE ORIGINATED IN NON CONTROLLED RADIOLOGICAL AREA. <2000 PCI/G. NO TA REQUIRED

(1) VOA - 8260A (TCL) {Chloroform, Methylenechloride}; VOA - 8260A (Add-On) {Trichloromonofluoromethane}
(2) Metals by ICP (TCLP) - 1311/6010 {Arsenic, Barium, Cadmium, Chromium, Lead, Selenium, Silver}; Metals by ICP (TCLP) Add-on - 1311/6010 {Antimony, Beryllium, Nickel}

Matrix *: S=Soil; SE=Sediment; SO=Solid; S=Sludge; W=Water; O=Oil; A=Air; DS=Drum Solids; DL=Drum Liquids; T=Tissue; WI=Wipe; L=Liquid; V=Vegetation; X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

BHI-EE-011 (10/99)

STL - St. Louis

W03143

17

SV
319
00031 9

Quanterra
Environmental Services

Lot No.: FON20233

Condition Upon Receipt Variance Report
St. Louis Laboratory

Client: Bechtel Hanford
Date: 4.11.00 Time: 11:10
Quote No: 35430 & 35632
Initiated by: Sue Mroz
Shipper/No: Airborne 4012669216
RFA/COC Numbers: B99-029-44
~~B99-028-35~~ SV 4.12.00

Condition/Variance (Check all that apply):

1. ☐ Sample received broken/leaking.
2. ☐ Sample received without proper preservative.
   - ☐ Cooler temperature not within 4°C ± 2°C
     Record temperature: _____
   - ☐ pH _____
   - ☐ other: _____
3. ☐ Sample received in improper container.
4. ☐ Sample received without proper paperwork. Explain: _____
5. ☐ Paperwork received without sample.
6. ☐ No sample ID on sample container.
7. ☐ Custody tape disturbed/broken/missing/not tamper evident type (circle all that apply).
8. ☐ Sample ID on container does not match sample ID on paperwork. Explain: _____
9. ☐ All coolers on airbill not received with shipment.
10. ☐ Sample volume insufficient for analysis
11. ☐ Other (explain below)

☑ **No variances were noted during sample receipt.**
☐ **Cooler Temperature Upon Receipt in °C:** 2°
Temperature Variance Does Not Affect the Following Analyses: _____
Notes:

Corrective Action:

☐ Client's Name: _____ Informed verbally on: _____ By: _____
☐ Client's Name: _____ Informed in writing on: _____ By: _____
☐ Sample(s) processed "as is".
☐ Sample(s) on hold until: _____ If released, notify: _____

Sample Control Supervisor Review: (or designate) Sue Mroz Date: 4.11.00
Project Management Review: _____ Date: _____

SIGNED ORIGINAL MUST BE RETAINED IN THE PROJECT FILE

SL-ADMIN-0004, Revised 02/01/00
W03143

BECHTEL HANFORD, INC.

Client Sample ID: B0Y0H7

GC/MS Volatiles

Lot-Sample #...:	F0D120233-001	**Work Order #...:**	DAT3P101	**Matrix.....:**	SOLID
Date Sampled...:	04/07/00	**Date Received..:**	04/10/00		
Prep Date.....:	04/13/00	**Analysis Date..:**	04/13/00		
Prep Batch #...:	0105157				
Dilution Factor:	1	**Method.....:**	SW846 8260A		

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Methylene chloride	**3.2 J**	**5.0**	**ug/kg**	**1.8**
Chloroform	**2.4 J**	**5.0**	**ug/kg**	**1.5**
Fluorotrichloromethane	ND	10	ug/kg	2.4

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
4-Bromofluorobenzene	104	(72 - 113)
Toluene-d8	131 *	(79 - 122)
Dibromofluoromethane	101	(75 - 141)

NOTE(S):

* Surrogate recovery is outside stated control limits.

J Estimated result. Result is less than RL.

BECHTEL HANFORD, INC.

B0Y0H7

GC/MS Volatiles

Lot-Sample #: F0D120233-001 **Work Order #:** DAT3P101 **Matrix:** SOLID

MASS SPECTROMETER/DATA SYSTEM (MSDS) TENTATIVELY IDENTIFIED COMPOUNDS

PARAMETER	CAS #	ESTIMATED RESULT		RETENTION TIME	UNITS
UNKNOWN		5.3	M	6.419	ug/kg

NOTE(S):

M: Result was measured against nearest internal standard assuming a response factor of 1.

BECHTEL HANFORD, INC.

Client Sample ID: B0Y0H7

GC/MS Semivolatiles

Lot-Sample #...: P0D120233-001 **Work Order #...:** DAT3P104 **Matrix.....:** SOLID
Date Sampled...: 04/07/00 **Date Received..:** 04/10/00
Prep Date.....: 04/17/00 **Analysis Date..:** 04/20/00
Prep Batch #...: 0108295
Dilution Factor: 1 **Method.....:** SW846 8270C

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
bis(2-Ethylhexyl) phthalate	ND	330	ug/kg	36

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
2-Fluorophenol	82	(22 - 96)
Phenol-d5	90	(23 - 108)
Nitrobenzene-d5	90	(16 - 104)
2-Fluorobiphenyl	80	(20 - 99)
2,4,6-Tribromophenol	7.7 *	(22 - 111)
Terphenyl-d14	75	(9.0- 117)

NOTE(S):

* Surrogate recovery is outside stated control limits.

BECHTEL HANFORD, INC.

B0Y0H7

GC/MS Semivolatiles

Lot-Sample #: F0D120233-001 **Work Order #:** DAT3P104 **Matrix:** SOLID

MASS SPECTROMETER/DATA SYSTEM (MSDS) TENTATIVELY IDENTIFIED COMPOUNDS

PARAMETER	CAS #	ESTIMATED RESULT	RETENTION TIME	UNITS
None				ug/kg

BECHTEL HANFORD, INC.

Client Sample ID: B0Y0H7

TCLP Metals

Lot-Sample #...: F0D120233-001 **Matrix.....:** SOLID
Date Sampled...: 04/07/00 **Date Received..:** 04/10/00
Leach Date.....: 04/13/00 **Leach Batch #..:** P010405

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 0108226						
Arsenic	ND	1500	ug/L	SW846 6010B	04/17-04/20/00	DAT3P107
		Dilution Factor: 5		MDL.....: 244		
Barium	**17.2 B**	**1000**	**ug/L**	**SW846 6010B**	**04/17-04/20/00**	**DAT3P10A**
		Dilution Factor: 5		MDL.....: 4.5		
Cadmium	ND	25.0	ug/L	SW846 6010B	04/17-04/20/00	DAT3P10E
		Dilution Factor: 5		MDL.....: 10.0		
Chromium	**4990**	**50.0**	**ug/L**	**SW846 6010B**	**04/17-04/20/00**	**DAT3P10H**
		Dilution Factor: 5		MDL.....: 13.5		
Lead	**350 B**	**500**	**ug/L**	**SW846 6010B**	**04/17-04/20/00**	**DAT3P10L**
		Dilution Factor: 5		MDL.....: 45.0		
Silver	ND	50.0	ug/L	SW846 6010B	04/17-04/20/00	DAT3P10P
		Dilution Factor: 5		MDL.....: 40.0		
Selenium	ND	1250	ug/L	SW846 6010B	04/17-04/20/00	DAT3P10T
		Dilution Factor: 5		MDL.....: 228		
Beryllium	**2.3 B**	**25.0**	**ug/L**	**SW846 6010B**	**04/17-04/20/00**	**DAT3P111**
		Dilution Factor: 5		MDL.....: 1.0		
Nickel	ND	200	ug/L	SW846 6010B	04/17-04/20/00	DAT3P114
		Dilution Factor: 5		MDL.....: 50.0		
Antimony	ND	300	ug/L	SW846 6010B	04/17-04/20/00	DAT3P10W
		Dilution Factor: 5		MDL.....: 98.5		

NOTE(S):

Analysis performed in accordance with USEPA Toxicity Characteristic Leaching Procedure Method 1311

B Estimated result. Result is less than RL.

BECHTEL HANFORD, INC.

Client Sample ID: B0Y0H7

General Chemistry

Lot-Sample #...: F0D120233-001 **Work Order #...:** DAT3P **Matrix.....:** SOLID
Date Sampled...: 04/07/00 **Date Received..:** 04/10/00

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Nitrate	ND	2.0	mg/kg	MCAWW 300.0A	05/01/00	0130267

Dilution Factor: 1 MDL.....: 0.10